

Covid19 with fatal spontaneous subdural bleed and status epilepticus in a primigravida: A lethal encounter

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ABSTRACT

Since 2019, The Coronavirus Disease (COVID19) has emerged as a global health concern. Various kinds of disorders like the vascular involvement along with neurological complications continue to be reported worldwide. In this case report we describe the case of a 28 year old Female who was antenatal (6.5 months) presented with Generalized Tonic Clonic Convulsions of duration more than 30 minutes which upon investigations turned out to be a case of subdural bleed and upon Nasopharyngeal swab testing revealed to be COVID19 positive case. Though the patient underwent urgent craniotomy and evacuation of hematoma was done, the patient ultimately succumbed leading to maternal mortality. Thus, this case report is an attempt to draw attention towards the maternal mortality caused due to COVID19 which we tend to overlook.

Keywords: COVID19, Maternal Mortality, Subdural Hematoma

1. INTRODUCTION

Towards the end of 2019 December the Severe Acute Respiratory Syndrome Coronavirus -2 (SARS-COV 2) infection was introduced to the world with the first case being reported from Wuhan, China. On 11 of March 2020 it was declared to be a pandemic by the world health organization and since then it has affected the lives of people globally. Since its emergence COVID19 has been a challenge for health care professionals all over the world not only to diagnose but also to manage due to its unpredictable and varied outcomes (Asadi et al., 2020). It has a spectrum of presentations which range from the respiratory symptoms to fatal and rare cerebrovascular manifestations. Acute hemorrhagic necrotizing encephalopathy, intracerebral bleed and acute Cerebro vascular accident have been shown to have association with COVID19. Subdural Hematoma (SDH) is a venous derived intracranial hemorrhage which is mostly associated with a traumatic injury to the brain (Khaleeq et al., 2020). There is increased risk of maternal mortality in the



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COVID19 patients who contract the disease in the second and third trimester. However there seems to be sparsity of research on maternal mortality being caused by COVID19. With the increasing number of mortality and morbidity by COVID19 its inadequate affect on maternal mortality is unexpected. This is complexed further by the cardiopulmonary physiology of pregnancy (Schwartz et al., 2020). There is reduction of health care seeking behavior as well as sparsity of resources for maternity leading to increased burden of maternal mortality during this pandemic. In this case report we report a case of a primigravida who presented at 7 months of gestation with a generalized tonic clonic convulsion which upon investigation turned out to be a case of subdural hematoma caused due to COVID19.

2. CASE REPORT

A 28 Year old primigravida was brought to the casualty of our rural hospital with the history of Generalised Tonic Clonic Convulsion since 30 minutes. She was managed immediately with injection diazepam and was shifted to intensive care unit. Patient had history of high grade fever, cough, bodyache and loss of smell since 7 days. There was no history of blurring of vision, epigastric pain, nausea or vomiting. There was no history of Hypertension, Diabetes mellitus, bronchial asthma or thyroid disorder. Obstetric History revealed patient was primigravida and duration of marriage was 1.5 years. Menstrual History revealed patient's gestational age to be 24.4 weeks.

On general examination patients condition was not satisfactory with pulse of 132/min, regular, blood pressure of 110/80 mmhg in right arm supine position and Spo2 of 92 on room air. On systemic examination patient was drowsy, responding to voice commands, there was no neck rigidity or signs of meningitis, bilateral plantar reflex was mute, bilateral chest was clear, Heart sounds were normal and on per abdomen examination uterus was 26 to 24 weeks in size, relaxed, variable presentation, and fetal heart rate was present/regular/145bpm. Lab investigations are mentioned in table 1. Urine was tested for ketone and albumin and was negative.

Table 1 Showing Blood Investigations of the case

Lab Parameter	Measured Value
CBC	Hb-10.9gm/dl MCV-80fl Platelet count-130000/dl WBC Count-4500/dl
LFT	Total Protein-6.2gm/dl, Albumin3.0gm/dl, Globulin3.2gm/dl, aspartate aminotransferase 20 units/l , alanine aminotransferase 24 units/l, AlkanlinePhophatase 90 IU/l, Total Bilirubin :1.6mg/
KFT	Creatinine:1.4mg/dl, Urea29mg/dl, Sodium137mmol/l, Potassium -3.7mmol/l
CRP	72.0mg/dl
D-Dimer	0.94
Serum Ferritin	820ng/ml

An MRI Brain was done which revealed subdural collection in bilateral temporo occipital region (Figure 1). Patient's nasopharyngeal swab was done for COVID19 which turned out to be positive. Patient was taken for immediate craniotomy and

200ml of clot was removed (figure 2). Post Procedure patient was shifted to Intensive care Unit and was started on mannitol along with antiepileptics and antibiotics. Chest X Ray was done which was suggestive of bilateral lower lobe infiltration (figure 3). Cerebrospinal Fluid Analysis was done which was negative for viral encephalitis tests and protein, glucose and cell count were within normal limits.

During the course of hospital stay patient's condition kept on deteriorating and she was intubated and taken on mechanical ventilator on day 10 of admission. Ultimately, inspite of all supportive measures patient could not be saved and succumbed on day 15 of admission.

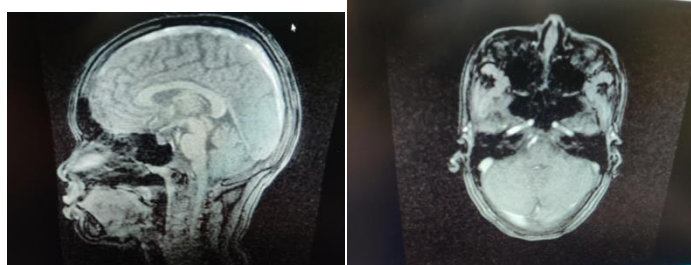


Figure 1 MRI Brain showing bilateral subdural collection in temporo occipital region

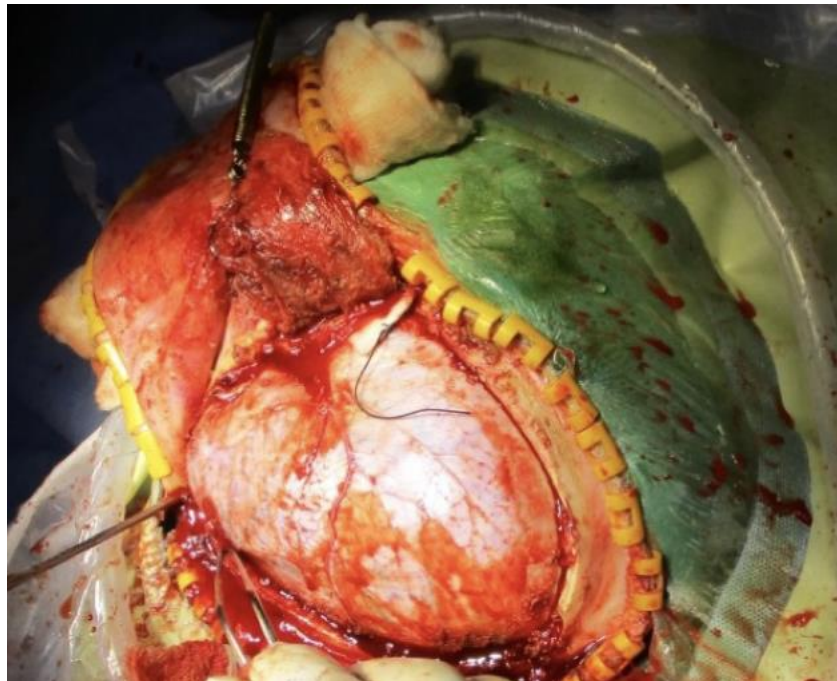


Figure 2 Showing Craniotomy of the patient

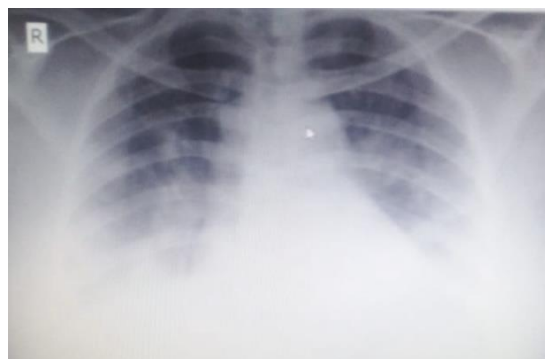


Figure 3 Chest X Ray showing Bilateral Lower Lobe Infiltration

3. DISCUSSION

During the second and third trimester COVID19 along with its complication have higher chances of adverse outcomes. Increased mortality can be attributed to late presentation to the hospital along with complications which might prove to be difficult to treat. In our case the patient had history of fever since a week but presented to health care facility only after a serious complication of generalized tonic clonic convulsion occurred which ultimately turned out to be fatal. There are various theories about the effect of COVID19 on nervous system however, binding of the SARS-Cov2 virus to Angiotensin Converting Enzyme 2 which plays important role in regulation of blood pressure leading to a damage to the blood brain barrier which is direct leading to intracranial bleed is the most accepted postulate (Wanjari et al., 2020).

Our case also had a aspect of COVID Pneumonia which further complicated the treatment of the patient. Pneumonia itself is a risk factor for pre term deliveries and intra uterine death along with maternal mortality. Another hurdle seen in the later stage of COVID19 which might lead to severe inflammation, intracerebral bleed and Hypoxemia is the cytokine cascade. The Cytokine Storm is a major cause of multiple organ dysfunction syndromes. There is excessive infiltration by the inflammatory cells namely monocyte and neutrophil into the tissue of the lung leading to lung injury, which explains the rapid deterioration of the patient after a week of fever with hypoxia in our case.

This in our case was further complicated by pregnancy. There is expression of ACE 2 receptors in the placenta which further leads to complication by the COVID19 in pregnancy and increased chances of Intrauterine Death (Richtmann et al., 2020). There is evidence of pathohistological changes in the placenta due to COVID19 which includes vascular malperfusion, villous infarction and deposition of fibrin with chorionic villitis. However transmission of COVID 19 to fetus has not been completely established. COVID19 is also shown to have effect on the female reproductive hormones further leading to complications in the pregnancy.

Thus our case report emphasizes on the importance of early reporting of the pregnant females to health care facilities. It also alerts the obstetricians and physicians to be aware of COVID19 in the Second and Third trimester of pregnancy as it may lead to fatal outcomes.

4. CONCLUSION

COVID 19 leads to increased risk of coagulopathy leading to increased risk of Subdural Hematoma Formation which in our case led to rapid deterioration and status epilepticus in our patient. This along with adverse effects on the placenta and lungs leads to an increased risk of fatal outcome during the second and third trimester of pregnancy. We conclude that COVID 19 has led to an increased risk of maternal mortality and that early presentation to the health care facilities might prevent this adverse outcome.

Author's Contribution

All authors contributed equally to the manuscript.

Acknowledgement

We thank the patients who participated and contributed samples to the study.

Informed Consent

Written & Oral informed consent was obtained from all individual participants included in the study. Additional informed consent was obtained from all individual participants for whom identifying information is included in this manuscript.

Conflicts of interest

The authors declare that they have no conflict of interest.

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Data and materials availability

All data associated with this study are present in the paper.

REFERENCES AND NOTES

1. Asadi-Pooya AA, Simani L. Central nervous system manifestations of COVID-19: A systematic review. *J of the Neurol Sc* 2020; 413:116832.
2. Khaleeq A, Ali U, Syeda H. Evidence of the COVID19 virus targeting the CNS: tissue distribution, host-virus interaction, and proposed neurotropic mechanisms. *ACS chemical neuroscience* 2020; 11(7):995-8.
3. Richtmann R, Torloni MR, Oyamada Otani AR, Levi JE, Crema Tobará M, de Almeida SC. Fetal deaths in pregnancies with SARS-CoV-2 infection in Brazil: a case series. *Case Rep Women Health* 2020; 27:e00243.
4. Schwartz DA. An analysis of 38 pregnant women with COVID-19, their newborn infants, and maternal-fetal transmission of SARS-CoV-2: maternal coronavirus infections and pregnancy outcomes. *Arch Pathol Lab Med* 2020.
5. Wanjari AK, Ayush Dubey, Sourav Chaturvedi, Sunil Kumar. Young COVID 19 presenting as fatal subarachnoid hemorrhage: Association or chance?. *Medical Science* 2020; 24(104), 2712-2715.